

REMARKS

By the present amendment in the accompanying RCE, independent claims 12 and 16 have been amended to clarify features of the present invention, with the features of claim 14 being incorporated into claim 12 and clarified, and such features also being incorporated into claim 16. It is noted that claim 14 has been canceled with other claims being amended in light of the amendments of the parent claims and in a manner which is considered to overcome the rejection under 35 USC 112, of claim 17. Further, new dependent claims 18 and 19 being presented which recite additional features of the present invention, as will be discussed below.

As to the rejection of claims 12, 13 and 16 under 35 USC 103(a) as being unpatentable over Ogahara (US Patent No. 5,958,265) in view of Sill et al (US Patent No. 6,367,413); the rejection of claims 14, 15 under 35 USC 103(a) as being unpatentable over Ogahara (US Patent No. 5,958,265) in view of Sill et al (US Patent No. 6,367,413) further in view of Shamouilian et al (US Patent No. 6,557,2489); and the rejection of claim 17 under 35 USC 103(a) as being unpatentable over Ogahara (US Patent No. 5,958,265) in view of Sill et al (US Patent No. 6,367,413) further in view of Nakano et al (US Patent No. 6,270,618); such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the

references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

At the outset, applicants note that independent claims 12 and 16 are directed to the structural arrangement as illustrated in Figs. 7 and 10, respectively, wherein as recited in claim 12, an electrode as represented by first conductive material 23 and second conductive material 28 is built-in or embedded within an insulating layer

22A, 23A and 22B in the form of alumina, as described in the specification and as illustrated in Fig. 7. The conductive material 23 is provided in a ring-like form, and as shown in Fig. 10 to which claim 16 is directed, the conductive material 41 is also provided in a ring-like form, with the conductive materials, as recited in the independent claims being connected with variable capacitors. As illustrated in Figs. 7 and 10, and now recited in each of independent claims 12 and 16, one portion of the insulating layer formed on an outer part of the electrode where either the first conductive material and the second conductive material are formed (Fig. 7) or where the conductive material 41 is formed (Fig. 10), has a thickness of the insulating layer which is greater than the thickness of another portion of the insulating layer formed on a central part of the electrode where the first conductive material and the second conductive material are not formed or the conductive material is not formed. This structural arrangement has the advantages that the thinner that the insulating layer is, the greater the electrostatic attracting force applicable to a wafer in the form of a substrate disposed on the electrode becomes. Thus, the electrostatic attracting force can be enhanced by making the insulating layer portion at portions other than where the conductive material is embedded in the insulating layer to be as small in thickness as possible. Applicants submit that independent claims 12 and 16 clearly recite such features and such features are not disclosed or taught in the cited art, as will become clear from the following discussion.

Turning to Ogahara, irrespective of the Examiner's contention that this patent discloses a first conductive material 61 formed within the insulating layer 2 and a second conductive material 91 formed within the insulating layer 2 and under the silicon ring 9, it is readily apparent, as recognized by the Examiner, that Ogahara fails to disclose or teach in the sense of 35 USC 103 the recited features of each of

independent claims 12 and 16 that one portion of the insulating layer formed on an outer part of the electrode where the conductive material or first and second conductive material are formed, has a thickness which is greater than a thickness of another portion of the insulating layer formed on a central part of the electrode where the conductive material or first and second conductive material are not formed. That is, in Ogahara, the thickness of insulating layer in the region of the conductive material 61 is substantially uniform from the central part to the outer part thereof other than in the outer part where the second conductive material 91 is formed, at which outer part the thickness of the insulating layer is reduced or smaller than the thickness at central parts insulating layer. Thus, applicants submit that Ogahara discloses a relationship contrary to that claimed. Of course, should the Examiner contend that the area at the central part, where the gas supply path 71 is provided, has a reduced thickness, applicants note that there is no thickness of the insulating layer thereat, since the insulating layer is not present in the region of the gas supply path 71. Thus, the only teaching of Ogahara in terms of thickness of the insulating layer is that the insulating layer at an outer part of the electrode where the second conductive material is provided has a reduced thickness with respect to a central part where the first conductive material is provided. Such disclosure and teaching is contrary to the claimed features as set forth in independent claims 12 and 16 and the dependent claims. Thus, applicants submit that all claims patentably distinguish over Ogahara in the sense of 35 USC 103 and should be considered allowable thereover.

The Examiner recognizes that Ogahara does not teach first and second variable capacitors and therefore combines Ogahara with Sill et al contending that Sill et al discloses variable capacitors 56 and 58. Irrespective of the utilization of

variable capacitors in Sill et al, it is readily apparent that as shown in Fig. 1 of sill et al, the thickness of the insulating layer of the susceptor 20 is uniform throughout.

Thus, Sill et al fails to overcome the deficiency of Ogahara with respect to the recited feature of thickness variation of the insulating layer, as recited in independent claims 12 and 16 and the dependent claims, and in fact, would appear to be contrary to the disclosure of Ogahara which provides that the insulating layer at the region of the second conductive material at an outer part of the electrode is smaller than that at a central part of the electrode. As such, applicants submit that the combination of Ogahara and Sill et al fails to provide the claimed features as set forth in claims 12 and 16 and the dependent claims of this application.

In an attempt to overcome the recognized deficiency of the combination of Ogahara and Sill et al, the Examiner contends that Shamouilian et al discloses in Figs. 1(b) and 1(c) a chuck with multiple electrodes 130, 135 that also includes insulation voids 52 where insulation has receded (less thickness of insulating layer) compared to portions with electrodes for the purpose of having cooling grooves (column 5, lines 1 - 15 and column 8, lines 1 - 30). The Examiner contends "Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to configure thickness of insulating layer as taught by Shamouilian et al in the apparatus of Ogahara in view of Sill et al to enable incorporate cooling grooves". Applicants submit that Shamouilian et al also fail to disclose the structural arrangement as set forth in independent claims 12 and 16 in terms of arrangement of conductive material and variable capacitors, with conductive material being formed within the insulating layer in a ring-like form. Figs. 3 and 4 of Shamouilian et al show a circular central conductive material 130 and at least one outer conductive ring of conductive material 135. While the insulation voids 52 are provided therebetween as

shown in such figures, it is readily apparent that this construction of Shamouilian et al does not disclose or teach the recited features of claims 12 and 16 of one portion of the insulating layer formed on an outer part of the electrode where the conductive material or first and second conductive material are formed has a thickness which is greater than a thickness of another portion of the insulating material formed on a central part of the electrode where the conductive material or first and second conductive material are not formed. Applicants submit that the Examiner has engaged in a hindsight reconstruction attempt which is contrary to the disclosures of the individual references in an attempt to reconstruct the claimed features and applicants submit that such features are not disclosed or taught in the cited art by this suggested combination. Accordingly, applicants submit that claims 12 and 16 and the dependent claims patentably distinguish over this proposed combination of references in the sense of 35 USC 103 and should be considered allowable thereover.

As to the further utilization of Nakano et al, the Examiner recognizes that Ogahara, Sill et al and further, Shamouilian et al does not utilize resonance coils. The Examiner cites Nakano et al for the utilization of resonance coils, but hereagain, it is apparent that Nakano et al does not disclose or teach the thickness relationship as recited in claims 12 and 16 and the dependent claims. Accordingly, applicants submit that all claims also patentably distinguish over Nakano et al taken alone or in combination with the other cited art in the sense of 35 USC 103 and all claims should be considered allowable thereover.

With respect to newly added claims 18 and 19, applicants note that claims 18 and 19 depend from claim 12 and recite the features as illustrated in Fig. 7 and described at page 8 of the specification of this application. More particularly, as

described at page 8, lines 15 - 18, and as set forth in claim 18, the thickness of the insulating layer at the ring portion 23A is three times the thickness at the inner part or central part of the electrode. Claim 19, recites the feature that the thickness of the insulating layer at the region of the second conductive material 28 is two times the thickness of the center part as described at page 8, lines 25 - 28 of the specification and it is readily apparent that this thickness relationship as recited in claims 18 and 19 is not disclosed or taught in the cited art.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 500.39750VX1), and please credit any excess fees to such deposit account.

Respectfully submitted,

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